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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/496,656	02/03/2000	Yoshimasa Saitoh	P99.2475	6539

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EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/496,656	SAITOH ET AL.	
	Examiner	Art Unit	
	Sow-Fun Hon	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/24/04 has been entered.

Withdrawn Rejections

2. The 35 U.S.C. 103(a) rejections have been withdrawn due to Applicant's amendment dated 8/24/04.

New Rejections

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahara et al. (US 5,579,140) in view of Gibbons et al. (US 6,307,609).

Regarding claim 8, Yamahara has a liquid crystal display device 1, comprising a pair of transparent (glass) substrates 6, 7 being aligned via a predetermined distance there between with at least one of them having thereon a film for liquid crystal orientation (alignment films 9, 11), and a liquid crystal layer 5 put in the distance (sandwiched) between the substrates (column 10, lines 20-35).

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One embodiment of the liquid crystal display has a contrast ratio of 137 (column 15, lines 10-15). Therefore it would have been routine optimization for one of ordinary skill in the art at the time the invention was made, to have improved the contrast ratio to be equal to or greater than 138.

Yamahara teaches that the alignment film is a UV-reactive (ultraviolet photosensitive) film, and is exposed to UV rays (irradiated with ultraviolet rays) (column 12, lines 55-65).

Yamahara, however, fails to teach that the film is exposed to first polarized UV rays while the film on the substrate is aligned parallel to a reference plane, and next to second polarized UV rays after the substrate is rotated on the reference plane.

Gibbons teaches a liquid crystal display (column 1, lines 35-40) comprising substrates with UV-reactive (photosensitive) alignment films (layers) (column 11, lines 60-65), wherein the alignment films on the substrates are exposed to first polarized UV (ultraviolet) light (column 10, lines 25-35) rays. The substrates are then rotated about the normal to the plane of reference (of the substrates), and the films on the substrates are exposed to a second polarized light (column 11, lines 60-70).

Regarding claim 9, Gibbons teaches that the substrates are rotated 90 degrees about the normal to the plane of reference (of the substrates), and the films on the substrates are exposed to a second polarized light (column 11, lines 60-70).

Regarding claims 10-11, Gibbons teaches that the angle of the exposure can be adjusted from about 0 to about 89 degrees (column 8, lines 35-45), which encompasses the claimed range of between 50 and 90 degrees relative to the reference plane, for the first exposure (claim 10),

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and of between 50 and 80 degrees relative to the reference plane, for the second exposure (claim 11).

Regarding claim 12, Gibbons teaches that the relative ratio of exposing energies is 4/1 between the first and second exposures (column 12, lines 20-30), within the claimed range of 100/1 and 1/1.

Regarding claim 13, Gibbons teaches that the light source is a UV lamp, which is a non-electrode discharge-type since it is gas excited by a microwave source (column 10, lines 25-35).

Gibbons teaches that the exposure process allows control of the degree of polarization and collimation, leading to improved performance and new exposure geometries (column 2, lines 15-20).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the exposure process of Gibbons to irradiate the UV-reactive alignment layers of Yamahara, in order to obtain a liquid crystal display with improved performance, as taught by Gibbons, and hence improved contrast ratio.

Response to Arguments

5. Applicant's arguments with respect to claims 8-13 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sow-Fun Hon

